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Central Park and the Exposition.

TWO or three weeks ago the committee whose duty it is to select a site for the World's Fair, to be held in this city in 1892, formally abandoned their plan to include a portion of Central Park in the exhibition grounds. This step seemed necessary on account of the opposition which the threatened occupation of the Park aroused—an opposition which grew stronger every day, and resulted at last in the resignation of several members of the committee and a public declaration by a large majority of the legislators elected from this city that they would vote against a repeal of the law which now protects the park from any invasion of this kind. We are not surprised at this result, for the park has been rescued from similar dangers many times before by the power of public sentiment when opportunity has been offered for full discussion. And yet this renewed manifestation of jealous regard for the park and intelligent appreciation of its purpose and value is an encouraging fact. If this action of the committee is final it will not only establish another precedent against future assaults upon Central Park, but it will give additional security to every acre of park area in every city of the United States for all time to come. On the contrary, if our chief city should allow the most famous park in the country to be desolated when it is only approaching mature development and has hardly begun its career of usefulness, there would be little hope that parks in other cities would be able to withstand the pressure for admission constantly brought to bear upon them by all sorts of enterprises foreign to the purpose for which they were created.

It is well to remember that the conversion of Central Park into an exhibition ground would be more than a mere local calamity. Public-spirited men in other cities who are helping by their moral support to avert such a calamity are strengthening the barriers which protect their own parks against intrusion. They are helping to give security to every public pleasure-ground, national park and botanic garden in the country, and they are encouraging the establishment of other institutions which must live and grow for long years before they attain the full measure of their usefulness. And the people of this state should remember that they can bring their influence to bear directly to this end by instructing their representatives in Albany to oppose any relaxation of the law which now protects the rights of the people in the park against invasion.

The recent wise action of the Site Committee is no guarantee that some scheme to capture a portion of the park for the Exposition will not be revived. If the fair is held on the site now designated, it will reach out for room in every direction. Even now it is proposed to change the law so as to include the Museum buildings and Harlem Mere. But no amendment to the statute should be tolerated. The law was passed deliberately, not only with the sanction but in accordance with the urgent demand of every reputable paper in this city. It was passed just after the park had been threatened by one World's Fair, and for the express purpose of protecting it in precisely such an emergency as the present. The more imposing the proposed fair, the greater the danger to the park. The fiercer the rivalry and the wilder the enthusiasm, the more need of safeguards erected in quiet times and with cool judgment. The law will never be able to do better service than it is doing on this particular occasion, and certainly this is not the time to repeal it, when the first opportunity is offered to prove its value. It is no time to open it for amendment, for one exception will make room for another. There is absolute safety while the law stands as it is—and absolute safety is what every friend of the park should insist upon.

Mr. Nicholson describes on another page his visit to Pallanza, on the shore of Lake Maggiore—a spot which has perhaps no equal in Europe for the rare and beautiful trees, especially coniferous trees, which abound in its neighborhood and thrive in a manner quite unknown in less favored regions. Here may be seen growing side by side, in perfect health, species from the Alps of Europe and the Andes of South America; from the mountains of northern Africa and the hills of southern China; from the plateau of Mexico and the plains of Canada; from the Himalaya and the Sierra Nevada; from our southern Pine-belt and from Japan; from Asia Minor and the mountains of Brazil. The best specimen in Europe of the curious Keteleeria of southern China is growing in Signor Rovelli's garden near a plant of the hardly less curious Pseudolarix, which has no rival in cultivation, except in the finer specimen still to be seen in the old Parsons Nursery at Flushing. Across the bay from Pallanza, on Isola Madre, is one of the most perfect natural gardens, in which our White Pine, with a robustness of growth and depth of color almost unknown in its native forests, towers high above Yews and Evergreen Oaks of extraordinary dimensions. There are Canadian Hemlocks in this Borromean garden which it would be difficult to match anywhere, growing among Himalayan Rhododendrons, Mexican Yuccas; and here, perhaps, is the finest Californian Incense Cedar in Europe, and a Himalayan Fir unsurpassed in its loveliness. On the curious but far less attractive and interesting Isola Bella the tree-lover will find in the court-yard of the palace a plant of the American Persimmon, of a size almost unheard of in Arkansas even, where the Persimmon attains to its best estate; and on the terrace not far from the group of great White Pines, which make every American feel proud, is a remarkable specimen of the Evergreen Carolina Cherry of our southern states.

Large specimens of several Mexican Pines are interesting features in many of the gardens on the shores of Lake Maggiore, where they find apparently the congenial conditions necessary for their growth. Here the variable *Pinus Montezume*, always healthy and sometimes handsome, appears under many grotesque and unfamiliar names. *Pinus patula* displays the beauty of its slender, graceful, pale green foliage, and in the garden of the Grand Hotel of Pallanza, *Pinus Ayacahuite*, the White Pine of Mexico, produces freely its enormous cones. A short hour's drive from Pallanza will carry the lover of trees to the garden of the Villa Ada, in which Prince Trubetzkoy planted his remarkable collection of conifers, rich in specimens of Retinospora of remarkable size, in

many Mexican Pines, in a wonderful plant of the Lacebark Pine of China (*P. Bungeana*), in a great collection of Cupressus of many interesting forms, and in a number of specimens of the bright blue variety of the Mt. Atlas Cedar, so vigorous in health, so graceful in outline and of such brilliant coloring that one may well exclaim in looking on these trees for the first time, "I have never seen a beautiful conifer before." Not far away are the grounds of the Villa Franzosini, rich in fine trees, and the best example, perhaps, of a well arranged and well planted garden, simple and convenient in treatment and uninjured by any gaudy horticultural innovation, which can be seen on the shores of the Italian lakes, a region famous for beautiful gardens.

The great botanical establishment which the people of New York are still talking about vaguely is to be realized in St. Louis. It is provided for under the will of Mr. Henry Shaw, who died during the past summer, having for many years devoted his leisure and a considerable part of his income to the establishment and care of a public garden in his adopted city. The whole of his estate, with the exception of a few small legacies, is now left to a board of trustees for the benefit of this garden. It has been appraised at nearly $3,000,000 and produces a net income of about $50,000; but as a large part of Mr. Shaw's property is invested in unimproved real estate within the city limits of St. Louis, the income of his estate may be expected to increase enormously with the growth of that city; and Professor William Trelease, the newly appointed director, will, in all probability, soon find himself at the head of a better endowed establishment than any other of its kind which has ever existed. There is no botanical garden in the world, with the exception of that at Kew, where the annual expenditures are not far from $100,000, which enjoys an income of anything like $50,000, and a vast amount of good and useful work can be accomplished every year with that sum of money. Professor Trelease, with the income now at his command or which will be available for his purpose in a short time, will be able to lay the foundation of an establishment of such scope that it will soon make St. Louis the botanical centre of the New World and draw to it students from every quarter of the globe. His early efforts, very properly, will be devoted to elucidating the botany of North America; and he is fortunate in possessing as a nucleus of the St. Louis herbarium the collections of Engelmann, which, in certain groups of plants, are of inestimable value.

Of special interest to young men who desire to become gardeners is the plan, not yet entirely matured, of offering, in connection with the Shaw Garden, six scholarships for garden pupils, for the benefit of young men between fourteen and twenty years of age, who are to be taken for six years, and who will be expected to work in the different departments of the garden, receiving, besides, theoretical instruction in botany, horticulture, economic entomology, and as much land surveying and bookkeeping as is necessary for a gardener having the charge of a large estate. It is proposed by means of these scholarships to make gardeners, and not botanists, and a taste for the manual work of the garden will be insisted on in the young men who hold them. They will receive pay for their work, and be given, free of cost, plain and comfortable lodgings near the garden, as well as free tuition in the School of Botany of Washington University, and such other instruction as may be necessary. Never before has such a chance been offered in this country to young men desiring to become thoroughly educated and trained gardeners, and the influence which Mr. Shaw's munificent bequest will exert through these scholarships upon horticulture in the United States can hardly fail to be great and lasting.

The Trustees of the Shaw Garden have it in their power to build up a great and useful institution of science and learning. Their opportunity is magnificent, and their responsibility is correspondingly great.

The Exhibition Grounds, Paris.

As the question of a World's Fair to be held in New York is being so generally discussed, it seemed desirable to publish for our readers the best view that could be obtained of the grounds of the great exhibition recently closed in Paris, although, of course, no single picture can give any adequate idea of the skill with which they were disposed, or of the gay, yet monumental, effect they presented. The illustration on p. 571 is from a photograph taken from the first platform of the Eiffel Tower, looking southward, away from the Seine, toward the largest buildings. In the centre we have the Palace of Industry, with its chief entrance, and the great central dome, that rose above the vestibule. Behind this is the higher mass of Machinery Hall. In the buildings to right and left the industrial display was continued; and could we see those which followed them, nearer the tower, we should see the Palace of the Fine Arts and the Palace of the Liberal Arts. The smaller structures near the great entrance held the exhibits which illustrated the history and condition of the city of Paris. The long tents on either side of the walks were for protection from the sun or rain, covering nothing but chairs and small booths where light refreshments were sold. The fountains in the centre are those which, when illuminated at night, proved the most popular attraction of the exhibition. The main jet then rose from the circle of bronze plants near the foreground, and not only beneath the tents, but up to the edge of the grass, spectators were massed in the densest lines. Between the four great feet of the tower was a lawn with a central fountain; on either side of it were gardens containing many small pavilions; and to the north, opposite the present point of view, was a large open space; then the bridge across the river, covered for the time with a red and white tasseled awning, and then the rising ground on the Trocadéro side, with a great cascade in the centre falling from beneath the Trocadéro Palace on top of the hill. Of course, the grounds were much larger than this description implies, extending along the *quais* for a great distance, and running back from the river again, nearly a mile further east, to fill the broad *Esplanade des Invalides*. But the present view shows their most effective portion, and though the horticultural exhibition was accommodated on the Trocadéro slope, there was much here of interest to the lover of plants and of gardening design. The harmonious contrast between the formal central walks and the more naturally disposed paths on either side should be remarked, and it should be remembered that the various pieces of statuary were not makeshift decorations, but admirable works in marble, produced for their especial purpose by well known artists. The hardy trees were set out when the design was made a year or two years in advance. Particularly effective were certain large, isolated specimens of *Phœnix Canariensis*, planted on the lawns, which, with the other isolated plants and flower-beds, were most appropriate to the semi-formality of the design. The terraces in front of the Palaces of the Arts were banked with fine Rhododendrons, exhibited by M. Moser and by Croux & Son; and here, too, were some admirable specimens of *Chamærops excelsa*. The little kiosks and pavilions had been carefully designed, and, in short, in every detail one saw the hand of the skillful artist disposing of the most excellent horticultural material. A particularly pretty idea was the encircling of the grass plots with rows of small electric lights set close to the ground. As viewed from the tower at night, these starry bands had an enchanting effect in contrast to the flashing splendor of the illuminated fountains, which in their turn were relieved against the transparent masses of the façades beyond, crowned by the great dome, with its tasteful festoons of lights, where the yellow of gas was effectively mingled with the whiter light of electricity. These gardens seemed then a fairyland indeed, and one was filled with admiration for the good taste which could produce so dazzling an effect, and yet

not fall into extravagance or mere glare and show. Nothing more impressive could be imagined than the view at night from the tower when great bodies of people filled all the open spaces, and the murmur of their voices added to the gaiety of light and color. During the day-time on Sundays every one was allowed to walk, sit and eat on the grass; and the sight was then equally amusing and attractive, a myriad white napkins and bright spots of color enlivening every green expanse.

Among the Pines of Northern Michigan.—II.

THE view of a country from the car window is not always satisfactory. We are often provoked by a curiosity to search some parts of a region over more in detail. It is better to walk or drive, with plenty of time at command. To enjoy such a trip most keenly, one should be accompanied by one or two others—seldom more—and all should be botanists, with an interest in gardening. If they are interested in collecting living plants for the garden, monstrosities and nice specimens for a museum, and plants for a herbarium, with a view to making a report, the enjoyment will be much enhanced. The person who is merely hunting for game or looking for the best trees for lumber knows little of the pleasure realized by the naturalist.

It is not an uncommon thing to see Hemlocks, Birches and sometimes other trees growing on low land with the roots next to the "stump" part of the tree all above the ground, like a spider on the tips of its long legs. Such trees were started as seedlings on a decaying log, which has since all disappeared in decay. In one place near Kingsley we found ten or a dozen small Hemlocks of this kind all in a row, where the log had only partially decayed.

Toward the south of the district we are considering are some very fine specimens of the Hornbeam. Especially are they beautiful in moist, rich soil, with plenty of room. I never fully appreciated the beauty of a well grown Hornbeam till I saw, for the first time, some well grown specimens in Central Park. The smooth-fluted gray trunks, the dense, clean foliage and the peculiar drooping fruit surrounded by a pair of mitten-shaped bracts, distinguish it from everything else.

Occasionally, where the soil is thin and the forests have been mainly cut away, may be seen villages which are now nearly deserted. Such a village is Cheeney, in Crawford County, and Fife Lake, in Grand Traverse County, is likely to reach the same condition. The mills burn down, are removed or the machinery has been taken out, while the shabby old building remains on guard near the piles of saw-dust, and a few worthless old logs never cut into lumber. The dwelling-houses can scarcely be given away, and there they stand fast going into decay. No one sees much beauty in a dead village, not even the botanist.

Akin to the above are the deserted homesteads and farms often found on the Jack Pine-plains. There remains the neat house made of logs or rough boards. The barn and outbuildings, the fences and gates, the remains of orchard trees and small fruits, of shrubbery and perennial herbs and the introduced weeds—all remain to tell of the culture and wasted capital and energies. There might have been some mismanagement, but the energy and care bestowed would, under more favorable circumstances, have won eminent success. It is to test such lands and give assistance to the owners that experiments are now being conducted by the Agricultural College.

The beautiful and the picturesque are often strangely blended. The dead trees and black stubs and logs, the ragged thistles and fireweeds, perhaps help to add interest to things that are beautiful. There is nothing to admire in the dead tree-tops and rubbish left where the trees have been felled, cut into mill logs and drawn away. The rubbish courts a fire which it is most sure to burst out on the arrival of the first very dry weather.

Railways require the removal of earth, cutting and filling, exposing much bare surface. In places there are irregular depressions sunk near the road to procure earth for the road. It is surprising with what rapidity kind nature begins to repair such damages as these. The remaining charitable old Hemlocks and Pines and Maples vie with each other in producing bountiful crops of seeds which, by the aid of the wind, they scatter on the bare slopes and in the naked places; and where enough moisture and shade are found, such spots are quickly covered by a crop of beautiful young trees.

In the newly exposed places, plants vie with each other to see which can do the most. Hanging over the crest of the banks, or some of the pits from which earth has been taken, are many beautiful plants from which lessons may be learned.

The Wintergreen, Bearberry, Trailing Arbutus, Dwarf Blueberries, Dwarf June Berry, Violets, wild Asters, the Sweet Golden-rod, Anemones, the Andropogons and bunchy Panicums among Grasses, and Dwarf Sedges, are among the most common and attractive plants in such places.

I must refer to the three-toothed cinquefoil, *Potentilla tridentata*, which is common in many sandy places in northern Michigan. The leaves are wedge-oblong, coarsely three-toothed, evergreen and glossy; the petals white. The plant spreads readily by root-stocks, and is perfectly at home in poor, sandy soil. It is attractive and good to use in patches, or when mingled with other small perennials.

Agricultural College, Mich. *W. J. Beal.*

Holiday Notes in Southern France and Northern Italy.—VI.

AT Luino we took steamer and passed a succession of picturesque villages charmingly situated amidst the Olive groves, vineyards and luxurious vegetation of the mountain slopes. Our destination was Pallanza, a thriving little town of some repute as a winter resort, built on the warmest and most sheltered spot on the Lago Maggiore. From the landing stage a row of *Magnolia grandiflora*—the Big Laurel of the southern states—attracted our attention; this is not often used as a street tree. My companion, however, informed me that he had seen it so employed at Angers, in western France. The nursery of Messrs. Rovelli, situated on a tongue of land jutting out into the lake, is now one of the show places of the district. Thirty-five years ago it was not adorned with a single tree, but the firm having bought out a considerable number of small proprietors, and then planted fine exotic conifers and other rare plants, many visitors with no special love for plants are attracted to it because guide-books, etc., announce it as one of the sights. To real lovers of trees there is much to instruct and delight, some of the specimens being probably unique in Europe as regards beauty and size. The following notes by no means exhaust the objects of interest; lack of space alone compels me to select the most striking features and to leave alone much that is wonderful to a traveler from more northern regions.

Amongst the conifers, perhaps the most remarkable is a large, handsome tree of the Chinese Golden Larch (*Pseudolarix Kæmpferi*); this cones very freely, and thousands of healthy seedlings carpeted the ground beneath the spreading branches; it has been found advisable to allow the seed to germinate where it falls, much better results being thus obtained than by collecting the seed and sowing it in pans under glass. Next comes a Chinese Abies, *A. Fortunei* (*Keteleeria Fortunei*), with large numbers of round, broad-scaled cones; a photograph of the tree itself, of the male catkins, cones and curious corky bark, have been published in the *Gardeners' Chronicle*. In England, and then solely in sheltered spots, this appears to be able only to keep alive. Other Firs are represented by examples of *A. Nordmanniana*—upward of fifty feet in height—*A. Cilicica* and of *A. bracteata*, both very beautiful specimens, and a curious columnar form of the common European Silver Fir (*A. pectinata*)—which the courteous proprietor informed us passed under the name of *A. laxa* in southern nurseries—in all probability it is Carrière's variety Columnaris. *Pinus Canariensis*—more than forty feet high—is here a fine object, and on the hot, dry limestone rocks of the Riviera it also grows apace. The Mexican *P. patula* does well, a striking species from the same country bearing the name of *P. Russelliana*. *P. longifolia*, a graceful, long-leaved Himalayan tree which must be cultivated under glass at Kew, has here attained tree dimensions, and the Georgia Pine, *P. palustris*, is at home in its company. The Japanese *P. Koraiensis* was bearing its first crop of cones, which, in addition to the habit, indicated clearly enough its relationship, from a systematic point of view, with the Arole (*P. Cembra*) of Switzerland. As might have been expected, the Monterey Cypress (*Cupressus macrocarpa*) does well at Pallanza, and we afterward frequently saw it along the Riviera. The Californian White Cedar (*Libocedrus decurrens*) had attained a greater size here than ever we had seen it before; the trunk was three feet in diameter. Trees of *Cryptomeria Japonica* showed how picturesque this species is under really favorable conditions, and so did one of *Cunninghamia Sinensis*—nearly fifty feet high. *Araucaria Brasiliensis*, bearing cones, came as a surprise to us who had only seen it grown under

glass. *Fitzroya Patagonica*, fifteen feet high, a beautiful mass of *Podocarpus Chilina*, with its long, narrow, dark green leaves, and two small growing conifers which have originated in the Pallanza establishment, must conclude my list of the Pine and Fir tribes. One of these—here called *Thujopsis nidifera*—is a dwarf plant with gracefully curved branches, suggesting a bird's nest; it is said to be a hybrid between *Chamæcyparis Nutkaensis* and the Oregon Cedar (*C. Lawsoniana*). The other is *Retinospora Trubetzkoyana*, named in honor of Prince Trubetzkoy, whose famous garden we, unfortunately, had no time to visit.

Camellias are a great feature at Rovelli's; they grow as freely as do the Cherry Laurels in England, and are cultivated in great numbers, from small stuff in pots to big bushes in the open ground. A goodly proportion are exported to other countries, the bushes selected for dispatch in autumn (as early as the beginning of September), being transplanted in spring. *C. Sasanqua* and its varieties are the first to flower; they begin in November; the others commence to blossom in January and continue until April. Other members of the Camellia family deserving of notice are Tea-plants, both from Assam and China; from his fine bushes of these Signor Rovelli—who has traveled a good deal and knows what tea is—told us that he had manufactured tea of fairly good quality.

The Camphor tree (*Cinnamomum Camphora*) grows as freely at Pallanza as a Willow or Poplar in many countries, and gives some trouble in pruning to prevent its exceeding the limits assigned to it; the trunk measured between two and three feet in diameter. The East Indian *C. glandulifera* also thrives equally well; here, however, the name under which it is grown is *Laurus glandulifera*, a title now incorrect and somewhat misleading, as there are no true Laurels in India, the Sweet Bay—the Laurel of the classical writers—being confined to the Mediterranean region, and the only other species of Laurus being a native of the Canary Islands. The California Olive (*Umbellularia Californica*) also grows to tree size and is everywhere known in the regions visited by us as *Laurus regalis*. In England it requires to be treated as a wall plant—except, perhaps, in such favored spots as Cornwall, and a few others.

Palms were not represented by many species, and of all of them much finer examples are to be seen along the Riviera. *Phœnix Canariensis* is hardier here than the Date Palm, and the Japanese Fan Palm (*Trachycarpus* [*Chamærops*] *excelsus*) is more robust and hardy than *Chamærops humilis*, which is a native of the Mediterranean region. *Cocos campestris*, a graceful species, is hardy, but it grows much more slowly here than along the Riviera. A fine example of *Jubæa spectabilis*, with a trunk two feet in diameter, is the most remarkable Palm at Pallanza.

Cycas revoluta is the only Cycad which thrives in the open air here. *Viburnum Awafuki*—met with in southern gardens under the name of *V. lucidum*—thrives wonderfully well; one grand plant, at least twenty-five feet in height, was bearing a crop of coral red berries. The most noteworthy Oak was the Portuguese and north African *Quercus Mirbecki*, a tree upward of fifty feet high, which bears acorns annually. Bamboos were very beautiful and vigorous; it is sad that the garden nomenclature of these graceful plants is in such a state of utter confusion. *Bambusa Simoni*—more correctly, *Arundinari Simoni*—is worth particular mention, not only on account of its merits as an ornamental plant, but because it does not die after flowering, as do many of its relatives. The Climbing Fig (*Ficus repens*), so popular in its small-leaved condition for clothing bare walls of plant houses in England, had here overtopped its wall, and developed large-leaved, rigid branches, which bore a crop of fruit.

Leaving Pallanza, where we had a fine view of the snow-clad glaciers and peaks of the Simplon group, we sailed past the far-famed Borromean Islands, which were converted in the seventeenth century by Count Vitalio Borromeo from barren rocks into gardens which now have a world-wide reputation. Unluckily, we had no time to go to Isola Bella, which boasts of many fine American trees. Gardening proper can, however, hardly be said to exist in this beautiful spot, terrace upon terrace with bewildering array of statues, vases, fountains and grottoes making a formal, unlovely combination, quite distressing to those who hold that a garden should exist primarily for plants and that the work of the sculptor should be a secondary consideration. Oranges and Lemons clothed the terrace walls, and fine Oleanders and other flowering shrubs somewhat relieved the monotony of stone-work.

Kew. *George Nicholson.*

New or Little Known Plants.

Yucca elata.

THE two large arborescent Yuccas of the valley of the lower Rio Grande, *Y. Treculiana* and *Y. filifera*, were figured in the early issues of this journal. The illustration upon page 569 of the present number represents a plant of the tall Yucca peculiar to the dry, desert region west of the Rocky Mountains, situated on both sides of the boundary between the territory of the United States and that of Mexico. It is the *Yucca elata* of Engelman, who, at the time his classical monograph upon the genus Yucca was written, considered this plant a southern, and arborescent form of the stemless *Y. angustifolia* of northern New Mexico and Colorado (*Y. angustifolia*, var. *elata*). He was fortunate enough to see it growing, however, during a journey which we made together to the Santa Rita Mountains in southern Arizona, during the autumn of 1880, and became convinced that it had best be considered a distinct species.* The Arizona plant may be distinguished from the allied Colorado species by the tall, stout trunk, ten to twelve feet high, with a diameter of eight to ten inches at the ground, and by its long flowering scape, seven to ten feet high, naked below, and bearing a much branched panicle often five feet long. The perianth is spreading, three and a half to four inches wide when fully expanded (those of the allied species are more globose), with oval-concave segments, which are waxy white and deliciously fragrant. Young plants begin to flower before they form a trunk, but even these are easily distinguished by the tall, naked scape and by the shape of the flowers.

A full panicle of flowers of this Yucca is an object of surpassing and surprising beauty. Our illustration is from a photograph made by Mr. C. G. Pringle on the dry plains between the town of Tucson and the Rincon Mountains in Arizona. It shows an old plant with two flower-panicles, the ends of the branches bearing green and living leaves, while a third branch and the upper half of the trunk are covered and armed with the reflexed dead leaves of many previous years.

Yucca elata was first detected by the botanists of the Mexican Boundary Survey more than thirty years ago, but it is probable that it has not been introduced into cultivation until quite recently. Seeds have now, however, been distributed among several European gardens, through the agency of the Arnold Arboretum. *C. S. S.*

Acanthopanax ricinifolia.

THIS great tree Aralia of northern Japan promises to become one of the most striking and remarkable ornamental trees which can be grown in the climate of the northern states. It was introduced several years ago into the Arnold Arboretum, where the largest of the two specimens which the Arboretum possesses is now nine feet high, having grown at the rate of about one foot a year. Although planted in low ground and in an exposed situation, they have shown no sign of suffering during the most severe winter they have experienced here. Flowers have not appeared yet, but the deeply divided and sharply lobed leaves fully a foot across, and borne on petioles nine or ten inches long, serve to give an idea of what this tree will look like if it ever reaches in this country the size which it attains in Japan. There is no plant in the collection which presents, even in its young and undeveloped state, an appearance so dissimilar to our native vegetation.

The following popular account of this plant, extracted from Rein's "Industries of Japan," may interest the lovers of rare trees who have not access to the work itself:

"This beautiful tree is distinguished by its great, lobed, shiny leaves, its white flower-umbels and black fruit of the

* "*Yucca elata.*—Trunk, three to five feet, or more, high; leaves, linear, rigid, sharp pointed, filamentose on the white margins; with white, oval, acute or acuminate bracts as long as the pedicels; flowers white; segments, ovate-acute; ovary attenuated into a whitish style; capsule, cylindrical-ovate, obtuse, short cuspidate; seeds, large, one-half inch wide, narrowly wing-margined."—Engelman in *Botanical Gazette*, vii. 17.

size of pepper corns, resembling, like its flowers, the Aralia and Ivy. Like *Magnolia hypoleuca* and *Æsculus turbinata*, it is scattered in the high mountain forests of Japan from Kiushiu to Yezo, but is most numerous in the north. In Yezo, trunks of from nine to twelve feet circumference and ninety feet height may be seen. I often found them in Hondo quite as high, but generally not so thick. In high forests the trunks are often somewhat bent, and do not branch until they are sixty feet high. Their dark, thick, rugged bark makes them as noticeable as their beautiful foliage. The white wood shades often into brown, and is moderately light, rough fibred and more or less porous. Cross cut, it shows year-rings, but no pith-rays. The pores are of two kinds: one sort microscopic and scattered about in the thick summer-wood; the other apparent to the naked eye, and denoting the spring girdles. According to Böhmer, the Ainos make their canoes out of the large trunks from eighteen to twenty-seven feet long.

Acanthopanax ricinifolia is sometimes found in gardens under the name of *Aralia Maximowiczii*. *C. S. S.*

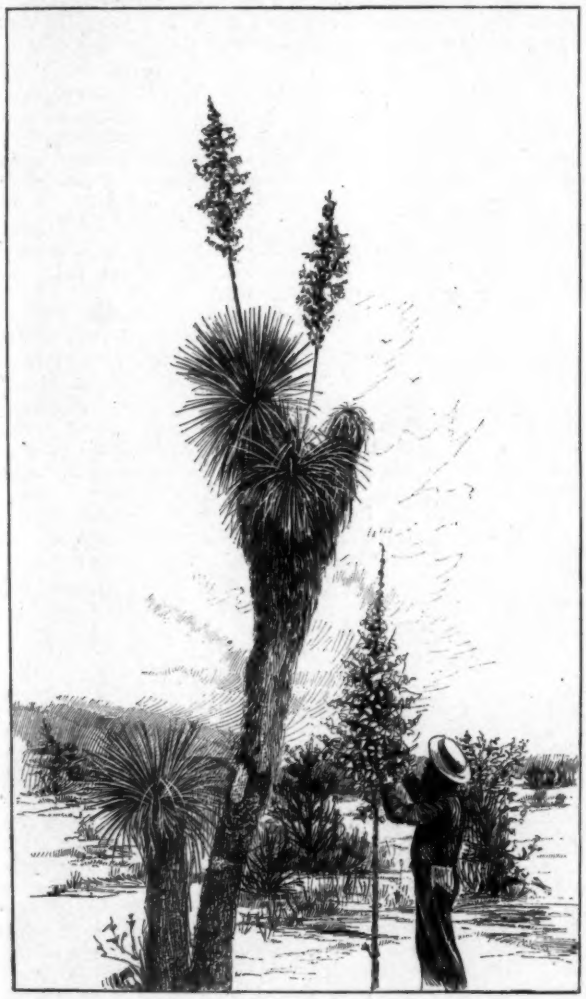


Fig. 146.—Yucca elata.—See page 568.

Cultural Department.

The Pecan Tree.

(*Hickoria Pecan.*)

ALTHOUGH this tree demands attention chiefly for its nuts, which form one of the valuable products of the Atlantic forest-region throughout all its southwestern section, it also has merits as a timber-tree. I venture to reply to many inquiries from all parts of the country concerning the character of this tree, the method of cultivating it, and the profit to be derived from it, the more readily because I have some new experience to report since I read a paper on these subjects before the Mississippi Valley Agricultural Society in 1883. For the latest information in regard to the propagation of the Pecan, I am indebted to Mr. J. J. Delchamps, of Mobile, an energetic cultivator of this tree, who has given it his attention during nearly forty years.

DISTRIBUTION.—The Pecan is found growing from northern Louisiana and Mississippi through the alluvial lands of the Mississippi River and its larger tributaries, as far north as southern Indiana, southwestern Kentucky, and along the Missouri to eastern Kansas, as well as in the Indian Territory, Arkansas, Texas and the adjoining regions of northern Mexico.

SOIL AND SITE.—Naturally, this tree is confined to the rich, cool and damp soil of the river-bottom lands, with a sub-soil which offers to its long tap-root a constant supply of moisture. This water supply and abundant plant food are essential to the perfect growth of the tree and the production of nuts of the best quality. The Pecan shuns a dry, silicious soil, and the attempts to raise it on the sandy rolling Pine lands have resulted in disappointment, the highly porous soil rendering the application of fertilizers of little benefit to the tree. It fails, also, on lands with a rocky subsoil, which impedes the growth of its tap-root.

RATE OF GROWTH.—The Pecan grows rapidly, reaching a height of from twenty to twenty-five feet within ten years. It begins to bloom and produce a few nuts in its seventh or eighth year. Trees three years old, when taken from the nursery in 1873, began to bear in my garden six years later, and the crop of less than half a bushel to the tree in 1883 has increased steadily until this year, when it was two and a half bushels of nuts of a quality that would command fifteen cents a pound. Another tree in my immediate neighborhood, from a nut planted in 1867 and left undisturbed, yields at present from three and a half to four bushels of nuts of a higher grade, commanding a price of twenty cents a pound. This tree is fully seventy-five feet high, with a girth of about sixty-six inches. I lately had the opportunity to measure several trees which have never been transplanted, but stand where the nuts were planted in 1866, in the sandy loam of the coast plain of Mobile, where the subsoil is a damp clay. By actual measurement they were found from seventy to seventy-five feet high, with a circumference of fully five feet breast high, and a crown varying from sixty to sixty-six feet in greatest diameter, yielding crops of good quality and quantity and coming true from seed. According to Mr. Delchamps, trees, undisturbed in their growth by transplanting, bloom several years earlier and produce remunerative crops of nuts correspondingly sooner than seedlings brought from the nursery; while it is not until the tenth year that the latter can be depended upon under the best conditions of soil and methods of cultivation to produce fruit. The crops increase every season for a long series of years, extending most probably over more than a century.

CULTIVATION.—The practice generally adopted is to plant the nuts early in the fall in drills two or two and a half feet apart in a generous, loamy soil, enriched, if necessary, by well rotted compost, and to keep the seedlings for the following two or three years under good cultivation. Having by the end of that time reached a height of from four to five feet, the young trees are carefully taken up, and, without delay, transferred to their permanent position. Care is taken not to expose the long tap-root, which is provided with only a few lateral rootlets, to the dry air. The fall of the year, after the first frosts, is considered the best time for transplanting. In the poorer and lighter soils of the coast of the lower Atlantic and Gulf states the soil should be from the outset enriched by a liberal application of well-rotted stable manure, repeated from year to year, particularly after the tree begins to yield large crops. To insure the best development of the tree and the production of nuts of good quality on the lands of the class described, annual mulching and manuring are absolute necessities. A mixture of stable manure and pure bone meal is the best compost. The Pecan is a strong feeder. It soon exhausts the plant-food in a naturally poor soil and shows the want of more by an immediate failure to produce perfect seeds. In the deep, rich soils of the Mississippi silt, manuring can be dispensed with for a long period. In such localities, under the sunny skies of lower latitudes, nuts of the finest quality are produced almost without failure every year, and by trees far beyond the first half century of their existence, provided the land is above the line of protracted overflows.

THE TAP ROOTS.—The theory that earlier fruiting is secured by shortening the tap-roots leads many nurserymen to cut off these roots of the young seedlings with a sharp spade. Mr. Delchamps asserts that in no instance within his knowledge

has any such root-pruned and transplanted tree proved an early bearer; that, on the contrary, such trees do not bear fruit until they are twelve, and even fifteen, years old. Experience, of late, leads more and more to the planting of the nuts where the tree is to stand. Several nuts, soon after their gathering, are placed in a hill well supplied with rotted litter. The following season the strongest of the seedlings is left standing. The hills are placed at a distance of from thirty to forty feet. Judging, however, from the diameter of the crown, as displayed by trees long before they have reached the fullness of their growth, it is evident that they should stand at least fifty feet apart.

Quality of Fruit.—The nuts from different individuals of spontaneous growth or under cultivation present an endless variation in size, shape, thickness of shell and plumpness and flavor of kernel. The nuts of the trees growing in the alluvial forests east of the Mississippi River are somewhat spindle-shaped in form, small, hard shelled and of scarcely any value for marketing. West of the Mississippi River, in the open belts of timber fringing the streams in Texas, west of the valley of the Trinity, the nuts are more oval, with a thinner shell and of better size and flavor. Nowhere else are such fine, natural crops of nuts produced as in western Texas. These are of no small importance to the settlers of that section. Many hundreds of thousands of pounds of nuts annually reach the markets of San Antonio and Austin, where they sell by the wagon-load at five to six cents a pound, and where they are assorted according to their quality before they are shipped to distant markets. Nuts of highest quality, oblong-ovate in shape, one and a half inches long, with shells so thin that they can be crushed between the fingers, and unsurpassed in richness of flavor, are grown with cultivation throughout Louisiana west of the Mississippi River. The earlier settlers along the so-called Mississippi coast parishes, in the Red River district of Bayou Têche, have given attention to the improvement of the Pecan-nut, and, of late, similar efforts have been made successfully in Mississippi, Alabama, Florida and South Carolina.

Hybrids.—The influences which cause the variations in the quality of the Pecan nuts, outside of those depending upon climate and soil, cannot be discussed at present. There can, however, be no doubt that in these deviations from the original type, much is due to cross-fertilization between individuals possessed of slight variations, originally mere sports. It is a fact that scarcely any other tree is more subject to hybridization by the crossing with other individuals of its kind. Such hybrids are met with in the forest and also among cultivated trees, to the great dismay of the planter, yielding fruit as unsightly as it is unpalatable. Crosses between this species and the Water Hickory (*Hickoria integrifolia—Carya aquatica*, Nutt.) are frequently met with. The fertilization in the case of these trees being entirely left to the agency of the wind, it is clear that intercrossings between the different species of Hickory, hybrids, variety hybrids, and the forms presenting slight deviations from the original character, must lead to the production of a multitude of variations, and that to keep a desired race pure, individuals bearing fruit of inferior grades growing in the immediate neighborhood of the grove should be removed.

Propagation by Seed.—The opinion held by many that the fruit does not always prove true to that of the parent tree, and that the propagation by seed of trees bearing the finest nuts cannot be depended upon with certainty, receives confirmation every year. Mr. Delchamps, convinced of the uncertainty of producing fruit in every respect equal to that of the parent tree, holds the opinion that there is a limit to the improvement of all fruits, and that if this limit is once reached, the tendency is strong to revert to the original type. According to his experience, this tendency is well marked in the Pecan, and repeated observation shows that trees grown from the finest nuts often produce fruit of very inferior quality. In the selection of nuts for planting he would reject the very finest as well as the poorest, and limit his choice to medium sized nuts, well shaped and of good flavor. He is confident of obtaining in this way a greater percentage of fine nuts and fewer inferior ones.

Propagation by Grafting.—To obtain just such nuts as are desired—that is, to propagate and multiply extra fine qualities—as in other fruit-trees, grafting must be resorted to.

The cultivator quoted states that, in the face of the bold assertions to the contrary made years ago, he succeeded without failure in whip-grafting or tongue-grafting the Pecan on a common Hickory (the Mockernut), the stock being sawn off close to the ground. He would layer well shaped and well flavored nuts in sand until January and February (in the latitude of Mobile), and plant them where the tree is to stand permanently. Under good cultivation, in a year most if not all the young trees will be stout enough to tongue-graft. The cions, taken from choice trees, should be cut some time before they are used, say about Christmas, and kept in sand until needed. As soon as the stock trees show signs of swelling the buds, say about the beginning of February, they should be cut to the ground and the cions grafted on them. If any are still too slender, the grafting can be deferred till the next year.

Pecans at the North.—The possibility of propagating successfully trees bearing nuts of finest quality in the territory north of the southern states is yet a question to be settled by experiment. This is the only way that it can be decided whether late frosts in the spring prove an obstacle by causing injury to the flower-buds, or whether the earlier frosts near the close of the season will interfere with the full maturing of the fruit.

Insect Enemies.—The Pecan-tree has some insect enemies which endanger its health and life. Amongst those are the larvæ of a cerambicoid beetle, which bores into the very heart of the tree, and a species of tent caterpillar, which causes less injury to the tree, but gives it an unsightly look from the numerous nests infesting the crown.

Possible Profits of Cultivation.—The Pecan-tree yields its crops of nuts almost without failure every season; however, not in equal abundance, one year of fruitfulness being generally followed by one of considerably shorter crops. From numerous inquiries made it can be asserted that a tree, after having reached the twentieth year, will for generations to come yield an income averaging from fifteen dollars to twenty dollars a year at ruling market prices. Considering the facilities with which the shipping and marketing of the Pecan-nut is attended and its possible transportation to the most distant points without any injury—considering, too, the increasing demand for this fine dessert nut in this country and in foreign markets—there can be no doubt about the profits to be derived from the establishment of a Pecan-grove. No part of an estate will prove of greater and more permanent value as a bequest to posterity.

In the southern states, in the region best suited to the cultivation of the Pecan-nut, lands of the required conditions are easily obtainable, abundant and cheap, particularly on the lower Atlantic or the Gulf coasts. As the trees come into bearing those found to yield nuts of inferior quality, and therefore of little market value, should be immediately taken from the grove and replaced by grafted trees of vigorous growth.

Mobile, Ala. *Charles Mohr.*

Rose Notes.

THE dull, cloudy weather which has prevailed for the past month has plainly affected both the size and color of many of the best forcing Roses, and in some varieties it has also caused many malformed flowers, a trouble not usually met with so early in the season. There are some good flowers to be found, it is true, but there are also many poor ones.

This was quite noticeable at the recent exhibition of the Pennsylvania Horticultural Society, in Philadelphia, where few superior blooms were seen among the cut Roses. Dull colors and in many instances comparatively small size was the rule among these flowers, and beyond question this was due rather to lack of sunshine than to lack of intelligent care on the part of their growers.

Very prominent just now among the newer Roses is the so-called dark La France, the Duchess of Albany, a flower which has attained much popularity, for its first season, in some localities. It is very similar to La France in general appearance, the chief difference being in its color, which is a deep pink. Perhaps, even, it may be termed a rosy red. There are, however, decided differences of opinion as to the comparative attractiveness of the new color, and it will probably be hard to persuade some persons that the newcomer is really better than a good La France.

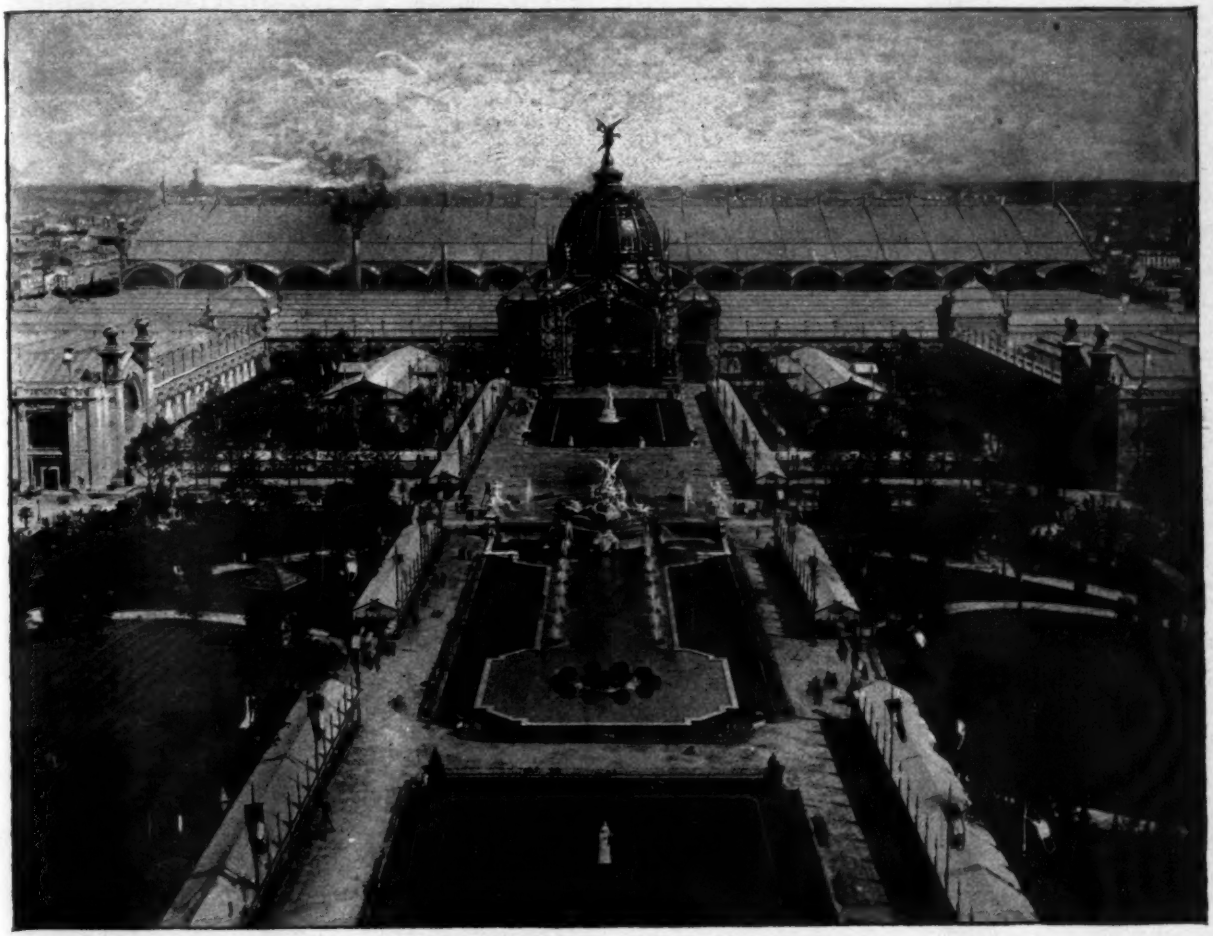
Madame Hoste is to be seen in good quality, and some buds are as large as those of Cornelie Koch, although not furnished with so stiff a stem. Madame Hoste seems free of habit both in growth and bloom, and may prove very useful, for it forces well. Its greatest drawback is its undecided color, the lemon yellow of the centre fading to white in the outer petals, and there is apparently considerable density in its shades of color.

A Rose, not often seen in quantity now, is Ma Capucine, but at the Philadelphia Exhibition before alluded to, a glass filled with blooms of this pretty little Tea attracted much notice. Ellwanger describes its color as "nasturtium yellow." It is of slender growth and not large enough in bud to satisfy the popular demand for big Roses; and yet Ma Capucine is much

used in Europe as a button-hole flower, and it was thoroughly tested as a forcing Rose in this country some ten or twelve years ago.

A nice bunch of Meteor, in one of the exhibition collections, reminded one that, when in good condition, this is a remarkably pretty, dark variety, but, unfortunately, it is such a shy bloomer during the winter that it can hardly be considered a profitable sort for commercial growers.

The flowers of Souvenir of Wootton thus far have hardly met the high expectations it had raised, but the season is young yet and much better results may be produced later on. The bold looking foliage and sturdy growth give promise of better flowers. It seems to have the fault of producing its blossoms in clusters, and it will, therefore, be found necessary, when this is the case, to disbud it to a single flower. By this means larger blooms may be secured.



Grounds of the Paris Exhibition from the Platform of the Eiffel Tower.—See page 566.

There are such wide differences between the climates of Great Britain and of the United States, that an opinion, based on European experience, cannot safely be offered in regard to the merits or demerits of a new Rose (or an old one, for that matter) in this country until it has been thoroughly tested here. An illustration of this was seen in the discussion that took place a few months ago in the columns of an English horticultural journal, as to whether the Rose Madame Lambard was or was not one of the most generally useful of the entire Tea class. A majority of the correspondents seemed to think it was decidedly the most useful; while on this side of the ocean a very different opinion prevails, and it is but little used.

Holmesburg, Pa. *W. H. Taplin.*

Tufted Pansies.

AMONG charming and desirable hardy spring-blooming plants the Hybrid Violets must take a foremost place. By judicious hybridizing of various alpine Violets and fine Pansies in recent years, a race of intermediate plants has been secured which is hardy, vigorous, free blooming, with most charming flowers, pure in color, and in many varieties having a very distinct perfume. As they have a more tufted habit than the ordinary Pansy, Mr. Robinson, of *The Garden*, an enthusiastic admirer of the race, has suggested that they be known as "Tufted Pansies." A recent issue of *The Garden* contains a plate of the variety Ariel—with a delicate mauve and white flower. This supplements two previous colored figures of other dainty beauties, and the series shows well the types of perfection in this flower. In comparison with the modern Pansy, the Tufted Pansy is a flower of moderate or even small size, but beside its more free blooming character, its tufted habit and somewhat less succulent stems, it is pleasing for its great purity and delicacy of color, with no trace of coarseness. The self-colored sorts are very beautiful, and a mass of one of the good whites, as the "Countess of Hopetoun," is a charming floral picture. As bedding plants Tufted Pansies are most desirable, coming into flower very early and blooming freely and continuously. Much attention has been paid to this race by the best English and Scotch florists, especially the latter, and numerous named varieties are offered. And it is to be hoped that some of our growers will interest themselves in these plants, which apparently have excited little attention here, but which will certainly become popular when their merits are known. It may seem a retrogression to cultivate Pansies of less than the standard three inches and upward; but the increase in size of the modern Pansy has been accompanied by an unpleasing tendency to coarseness, and there are still flower-fanciers who do not look upon big blooms of everything as of first importance, a fact which seems to require emphasis in these days. These Pansies may be had from seed, which is offered by English seedsmen, though finest varieties do not reproduce themselves truly.

However, a packet of seed will produce many charming varieties and good kinds may be selected from these if named plants are not obtainable. The culture is the same as for Pansies—a good, deep, cool, well enriched soil and frame protection in winter.

Elizabeth, N. J. *J. N. Gerard.*

Orchid Notes.

Cape Orchids.—During the last few years an effort has been made to popularize some of the elegant little terrestrial Orchids of the Cape of Good Hope in British gardens, and the movement has been attended with a certain amount of success, though much remains to be done if they are to take a permanent place among our cultivated Orchids. Beautiful as some of them are, their successful cultivation is by no means such an easy matter as is that of the majority of the epiphytic species, and even when they appear to be doing well some of them have a way of taking French leave during the resting season that is particularly irritating. One cause of failure is, doubtless, the difficulty of imitating, under cultivation, the conditions under which they exist in their native homes, and when these conditions are understood and successfully imitated, these plants may become more familiar to us. A few years ago it was considered quite a feat to grow the beautiful *Disa grandiflora* successfully, and for the simple reason that its requirements were not understood. A writer in the *Gardeners' Chronicle* has recently described the Disa-house of Messrs. James Backhouse & Son, of York, and shown what can be done when the task is set about properly. It is ninety-eight feet long by twelve and a half feet wide, partly sunk, and the sliding lights are taken off in fine weather from early spring to late autumn, while they are always left open at night. The tubers are planted out in a prepared compost and liberally watered. Under this treatment over five hundred spikes were produced which bore over a thousand flowers, and one spike was nearly three feet high and bore nine large flowers. Such a sight must have been worth going a long way to see.

Other species which have been successfully grown are *Disa crassicornis*, *D. lacera*, *D. racemosa*, *D. tripetaloides*, *Satyrium carneum* and *S. coriifolium*, with several others of considerable interest. Speaking of Satyriums, a recent writer recommends that the tubers should be potted much as Hyacinth bulbs would be, and remarks that they are not more difficult to flower when properly grown.

The blue flowered group of Disas have long been sought after by cultivators, but hitherto they have been grown with very little success. During the present year several plants of *D. lacera* have flowered, and one of them has been figured in the *Botanical Magazine;* but, in spite of its novel color, the figure seems to suggest that only when grown in strong clumps would it make a very showy garden plant. Whether this is practicable remains to be proved, and at present appearances seem rather against it, unfortunately.

Cultivators of Cape Orchids will doubtless welcome a little work entitled "The Orchids of the Cape Peninsula," by Mr. Harry Bolus, F.L.S., which appeared some little time ago, in which much interesting matter relating to this subject is to be found. It appears that the majority of the species flower in early summer, yet there is no month (excepting, perhaps, April, in some unfavorable year) in which some Orchid may not be found in flower on the Cape Peninsula. Beginning in April the flowers of *Disa tenuis* and *Liparis Capensis* may be found. These continue in various situations until June, and are succeeded in July by *Disperis Capensis*, scattered everywhere over the Flats. These all have green or dull colored flowers, but a note of brighter color is struck when *Satyrium coriifolium*, with its orange flowers, and *Disa obliqua*, with flesh colored flowers striped and blotched with purple, appear. Several others quickly follow, until in October the maximum is reached. In November and December the Orchids on the Flats have disappeared, though they are still abundant on the mountains. "After December the number rapidly diminishes, yet the peerless *Disa uniflora* is in its glory on the rivulets of Table Mountain in February. The last to linger are the lovely blue *Disa graminifolia* and the flame colored *D. ferruginea*, which may often be found until late in March. The three last named are the brilliant product of the unclouded summer sun; and with them Nature gloriously closes, as in a gorgeous and many-colored sunset, the splendid array of these beauties of the floral year."

The *D. uniflora* here mentioned is none other than *D. grandiflora*, being an earlier name of the species, and we may conclude with the following remarks upon it, from the pen of Mr. Bolus: "This beautiful flower is the object of universal admiration, and the name which has been given to it, the 'Pride of Table Mountain,' indicates the honor in which it is held. It is indeed the queen of terrestrial Orchids in the southern Hemisphere, as *Cypripedium spectabile* may be said to reign, though with less magnificence, in the northern. . . . It is still abundant on Table Mountain, although of late years large quantities of the tubers have been annually exported to Europe, and much needless destruction, arising from wasteful gathering by unskilled hands, resulted. But the summit of the mountains being Crown land, the government has recently intervened and restricted the removal of tubers within reasonable limits, so that, if this supervision be continued, there will be little reason to fear the extinction of this truly noble species." *Calypso.*

London.

Zygopetalum Burkei.—This is quite a handsome plant, and not at all common. It was introduced from Guiana in 1883, where it was found growing among the grass in swampy places and also on the drier uplands. It should be placed in the warmest house; indeed, we could do nothing with it until we placed it in the warmest corner of the Phalænopsis house, in company with *Phajus tuberculosus*, *Odontoglossum Roezlii* and other so-called "miffy" Orchids. It now grows like a weed, potted in a mixture of loam, sand and decayed leaves, kept very wet, and syringed overhead at least twice a day. After growth is finished a little less water may be given. This species has a clustered habit, with oblong, lanceolate bulbs about three inches long, and two lanceolate, acuminate leaves about one foot long. The scapes, which appear with the young growths, are about twenty inches long, bearing half a dozen very attractive flowers, with greenish sepals and petals prettily mottled and barred with brown. The ovate, acuminate lip is pure white, faintly tinged on the margin with yellow; the crest, or ruff, has crimson colored folds. The flowers last quite a long time in perfection, and are found valuable for cutting.

Kenwood, N. Y. *F. Goldring.*

Urceolina aurea.—A group of a dozen pots of this plant, and comprising nearly forty spikes of its elegant brightly colored flowers, is very ornamental at this time of year, or indeed at any time. This species is an old garden plant, but it is not much cultivated nowadays. To be effective it should be grown in quantity and massed when in flower, and as the bulbs yield offsets very freely, there is no difficulty in soon obtaining a good number of flowering bulbs. The erect spikes are a foot long, and each one bears from three to five pendent flowers on thin pedicels, hanging like ear-drops. The corolla is urn-shaped, two inches long, the lower half bright yellow, the upper emerald green. The flower-spikes are developed after the leaves have withered. The plants should be potted in fibrous peat and sand and grown on a shelf in a stove. They do not like bright sunshine, being accustomed to the shade of woods, where they grow wild in the Andes of Peru. During growth they require a regular supply of water, but after the leaves change color no water should be given. There are two other species, viz., latifolia, which is larger in bulb and bears about eight flowers on a scape; and miniata, generally known as Pentlandia, which has bright scarlet flowers, and thrives in a green-house. It flowered at Kew in July last. The most useful of the three, however, is *U. pendula* (syn. *U. aurea*). *W. Watson.*

Kew.

Work in the Vineyard.—The frequent rainy days this fall have interfered seriously with working the soil, especially where it is of a clayey nature, but opportunity has thus been given for early pruning of the vines. This work is more easily and expeditiously and more comfortably done in mild weather than in the winter when the ground is frozen or covered with snow. A few grape-growers hold to the antiquated notion that no pruning should be done except in February, but experience has proved that no harm comes from early cutting. The work of the plant is not completed with the ripening of the fruit and the fall of the leaves. The wood continues to harden, and meanwhile the sap does not cease its movements. This sap, which in spring will follow the cut of the knife or shears like water, is much thicker at this season of the year, and exudes, if at all, in a thick gummy condition. If, as some suppose, the ripening of unnecessary wood is a tax on the plant, its removal now certainly must be a relief and a benefit to the remaining wood. Whether this theory is correct or not, autumn pruning of the Vine is on the increase, and constantly growing in favor. It not only gives the plants a neater appearance, but affords much better facilities for clearing up the ground and putting it in good condition for passing the winter. If the plants need laying down for protection it is

more easily accomplished. My Vines were all pruned last month much earlier than usual, and whatever the happening of the winter, the job is out of the way and causes no apprehensions. *E. Williams.*

Montclair, N. J.

Brussels Sprouts.—This delicious vegetable is grown quite extensively in the Cauliflower districts of Long Island, and is proving a profitable industry now that its cultivation is getting better understood. It is grown in the same manner as the Cauliflower, the seed being sown early in June and the plants set about the 1st of August. The usual custom is to set the plants in the same field as the Cauliflower, as they require the same treatment in all respects, and are followed by the same crop, which is usually Corn. The crop of Brussels Sprouts comes in conveniently, as it need not be sent to market until the Cauliflower season is past, as ten or twelve degrees of frost does not in the least injure it, while a few degrees of frost is beneficial, having the same effect as it does on the Ruta-baga. Some of the growers have found by experiment that the seed grown on the island does far better than that which is usually sown, the plants being more vigorous and more productive. The crop is far more remunerative than Cauliflower, as it is more sure, and the prices better, while there is a great saving in freight. A bushel of sprouts will bring as much, usually, as a barrel of Cauliflower, while the yield per acre will not be materially less. It is surprising that Brussels Sprouts are not found in every private garden, as they are among the most palatable of vegetables and easy to grow. *C. L. Allen.*

Floral Park, L. I.

The Japan Persimmon.—A neighboring gardener has just brought me some excellent fruit of the Japanese Persimmon, to show what a small bush in close quarters can produce. His plant is in a box but eighteen inches square, and it is but three feet high. During the summer a place is found for it under the shade of a Grape-arbor, and in the winter in a cool cellar. There are about a dozen ripe fruits on it now and last year fourteen were gathered. The possessor of this Persimmon says that it requires less care than any plant he has. As the fruit of some varieties is delicious, I think it should be more generally known that its cultivation is very simple. Would it not be a good addition to the list of fruits for cultivation under glass?

Germantown, Pa. *Joseph Meehan.*

Correspondence.

The Abandoned Farms of New Hampshire.

To the Editor of GARDEN AND FOREST:

Sir.—Mr. N. J. Bachelder, the Commissioner of Agriculture and Immigration, sends me a price list of more than one hundred abandoned farms in this state. An accompanying note says that these farms have been reported by the selectmen of the various towns to have fairly comfortable buildings, and that they comprise but a small part of the abandoned farms of the state, a full description of which will be given in a forthcoming catalogue, if the necessary facts are reported by the owners. The Commissioner observes that "in most instances these farms have not been abandoned because the soil has become exhausted, or from the lack of natural fertility, but from various causes appearing in the social and economic history of the state, which will be more fully discussed hereafter."

This is an interesting and important undertaking. The law authorizes the collection of necessary information in regard to the opportunities for developing the agricultural resources of the state through immigration, and the facts obtained and the advantages offered to immigrants are to be circulated where the Governor and Council may consider it for the best interest of the state. The inquiry and discussion which will result cannot fail to be of great interest and value, and I hope that everybody will co-operate with Mr. Bachelder in his purpose to make the investigation as thorough as possible. At this stage I submit some notes of observations made while living here during the last ten years.

Some of the abandoned farms belong to men who left them in early life and have established occupations and homes elsewhere. There is nothing mysterious or remarkable in their having remained away; the point of interest is in the fact that nobody has cared to buy and work these farms, as many of them have long been for sale on extremely easy terms. One of the chief reasons why men who could have bought such farms have not done so, is that they have preferred to go west and take the chances of bettering their condition there. I have seen many of them, in all the regions from western Iowa and Minnesota to the Pacific coast; most of them working harder than they would have to work here, and having a much poorer living, the life of the women a long starvation from homesickness and hunger of mind and heart. But a few of these emigrants have grown rich, and they all leave their old homes in the hope of being among the few fortunate ones.

The conditions of soil and climate in this state are such that farming will yield a living on most of the land that has been brought under cultivation, if the farmer and his family do all, or nearly all, of the work, and practice reasonable economy. Some accumulation would be possible, but the gain would be slow. Some of the best farms would admit of the employment of a hired man, during a part of the year, at least, if he would work faithfully and efficiently for moderate wages, as in earlier times; but, in general, the farmer and his wife and children would have to do nearly all the work. The return for their toil, the prospect or outlook for them, would be the possession of a home of their own, with the same steady hard work kept up till age unfits them for it, when they may hope to have laid by something for the support of their later years.

Now the race of men and women who will go on thus toiling patiently and practicing small economies all their lives for the sake of a mere living, is very nearly extinct in this region. The young men and women will not stay here under such conditions; they will go elsewhere for the chance of doing better. Illusion is an important element in the life of most Americans. We do not value security very highly, but prefer the possibility of splendid fortunes to the certainty of moderate gains. Usually the possibility is only imaginary, but the fascination of the game lures young men on, and there is still an element of inflation and romance in the practical life of our country.

It is also to be noted that the growth of manufacturing industries has brought about great economic and social changes. In many instances the former town-organization has been modified by the development and dominance of the manufacturing villages, with their population of operatives, often largely a floating or changing one, in the employ of the proprietors of the mills; and it is often apparent that the farmers have less interest and prominence in town affairs than they had under the old order of things. One effect of the change is that the sense of community, of a common interest in the welfare of the town, has been to a considerable degree eliminated. There appears to be less of public spirit, and, at any rate, what remains is not distributed among so many citizens as formerly.

The truth is that the old New England civilization and organization of society has here mostly come to an end. It has run its course, has completed its cycle, and we are beginning again with new and very different materials. We have already large populations of French Canadians and other foreigners, and it is plain that for a long time to come we shall have, in the principal communities of this state, the civilization and the intellectual and social life which these people and the Roman Catholic Church will produce under the new conditions of life in New England. The farmers still stand by the churches of the earlier time, but the bond which they formerly supplied for the social life and public spirit of the towns has become less vital and efficient with the decline of the rural population.

Many people here advise the encouragement of immigration from the north of Europe; and I have no doubt that Swedes and Norwegians could make a living on these abandoned farms, because they would do more work and consume less for their living than native New Englanders, and the value of taxable property and the volume of business in the towns would be increased. But the gain would be temporary. If the new inhabitants send their children to our schools we shall soon Americanize them to such a degree that they will not stay on the hills, and in twenty or twenty-five years the farms will be more abandoned than they are now. I think there can be no permanent restoration of farming in this state without some considerable changes in the methods of it, and in the thought and methods of life of our people; and beginnings in such things are apt to be difficult.

Natural conditions are favorable for stock-raising, and many of our leading citizens have done much to promote the general welfare by improving the character of farm animals. The state is adapted, in a peculiar degree, to the growing of sheep. I have eaten mutton in every part of our country which produces it, but have never anywhere else found any that approached the excellence of that which is grown in New Hampshire. If the people of the cities were aware of its quality there would be a great demand for it at the best prices, but there is not enough to supply the few people who use it in the

villages here. The dog is a kind of sacred animal with us, and dominates the community. He is the object of a personal affection, a sentiment of romantic regard, which rises far above such sordid considerations as the possible profits of sheep raising. Our best people—and some others—keep dogs, and when the instinct of the chase awakens in them and they go forth upon the hills and hunt down the sheep, and have to die themselves for their frolic, we all mourn their fate. The sheep can be paid for out of the public treasury—there is a tax on dogs—but nobody has any sentiment about sheep. We are in that stage of development in which we grow dogs and delight in them, but not sheep.

There is considerable land in farms in this state which, if properly managed, would be more profitable for the production of timber than for any other crop, and which would be worth more than it is to-day if forest-conditions had always been maintained on it. But timber land here needs to be handled with judgment and foresight. It has to be protected against fire and pasturage, of course, and unless the timber, when it has grown, is cut off intelligently, forest land is not always a good permanent investment. It is the opinion of many of our intelligent lumbermen that much of our timberland might be made more profitable by improved methods of management.

The results of our system of cultivation, as shown in many of the farms in all the older parts of our country which have not been abandoned, and the inclination of so many of our people to seek their fortunes by leaving their early homes, point to the fact that a considerable proportion of our material success has been achieved by the partial exhaustion of our capital in the fertility of the soil. We have amassed wealth by robbing the future, and we are transmitting our impaired and damaged heritage to those who come after us. Whatever may be the fertility of the abandoned farms of this state, the methods of culture widely followed in our country have seriously diminished the productive capacity of the soil, and many farms in other parts of the United States would in time be abandoned if there were still, as formerly, a boundless area of virgin land for our people to appropriate. Perhaps we may in time come to understand that the earth is adapted to yield a living to a considerable number of men if they will wisely till it and husband its capacities; but that its resources are not profuse enough to sustain indolent luxury or careless waste, and that toil and scant indulgence are, in the long run, inevitable for the mass of men. Thus far in human history slavery and war have been pretty constant conditions. The forms change, but the essential facts abide hitherto, and perhaps they may still do so.

In my judgment, existing conditions co-operate to make an opportunity for an important change in the economic and social elements in the life of the state. I think that many of the abandoned farms, and many of the hill farms which have not been abandoned, would be good investments for men of means who live in the cities, and who would like to have summer homes for their families in the country. The climate of our state does not suit everybody, of course. But for those whom it does suit, it would be hard to find anywhere on the planet a more salubrious and delightful region than this is for the time between the first of June and the last of October. No other mountain country that I have seen has such expanses of uncontaminated and vital air. I think that, looking far ahead, as a few men at least should try to do, looking at all conditions and relations comprehensively, the best and wisest thing for all concerned would be a considerable movement of men of wealth from the great cities of our country to the hill farms of this state. They should be men of intelligence, with adequate knowledge and judgment for the management of their woodlands, so that the growing of timber as a crop would be profitable. There is no ground of hope for the future prosperity of our people unless forest-conditions are permanently maintained on a large proportion of the land of the state. At the same time a system of highly concentrated farming should be followed on whatever land is kept in cultivation. The ownership of farms here by men from the cities would render such methods of culture possible, would give profitable employment to many laborers, and would increase the value of land and the amount of business in every part of the state occupied by the new summer homes. It would be the establishment of better conditions, the beginning of a new order of things which would be permanently favorable to the interests of our entire population.

I should be glad to stimulate public interest in the investigations which are now in progress under the direction of the government of this state, and I am sure that the reports of the New Hampshire Commissioner of Agriculture and Immigration will deserve the attention of all students of American civilization.

J. B. Harrison.

Franklin Falls, N. H.

Native Shrubs.

To the Editor of GARDEN AND FOREST:

Sir.—I was much pleased with your article calling attention to the *Viburnum lantanoides* and speaking of its great beauty. It may not flourish in the dry, sunny garden of the nurseryman, as you say; I have found it, however, very easy to transplant into places shaded by deciduous trees. Small bushes taken from the neighboring woods in the fall, and even when in flower in the spring, not only survive but grow luxuriously. Some of these thus transplanted are now ten feet high and are very delightful in their striking and beautiful foliage as well as in their blossom.

The name of Moosewood, given by you as the common nomenclature, is also applied to the Striped Maple (*Acer Pennsylvanicum*), though not so commonly as the Viburnum. The Striped Maple is more of a tree, and is very graceful and pleasing, and also easy to transplant.

There are other of our native shrubs of great merit, which can easily be transplanted. The Ground Cedar or Savin (*Juniperus communis*), with its vigorous, close growing, shining foliage and hardy habit, can be used with good effect in rocky, sterile places where it is difficult to get other shrubs to grow.

Nothing, however, is finer than the Mountain Laurel (*Kalmia latifolia*); nor is it difficult of cultivation, as many suppose. In preparing places for this plant I have found that it grows and blossoms best in beds made like those used for Rhododendrons, of a depth of about two and a half feet, and filled with one-half peat mud and the other half loam and manure and some sand. The peat I suppose is useful in retaining moisture. The Laurel has many small roots that do not extend a great way from the bush, but permeate every inch of the soil they reach in ground prepared in this way.

C. W. L.

Beverly Farms.

Forest Fires.

To the Editor of GARDEN AND FOREST:

Sir.—The Nemadji River drains, in Wisconsin and Minnesota, very little land except deep beds of clay with some layers of fine sand.

The surface rises, westward from Lake Superior, some 400 feet by terraces, and through these the streams have cut deep ravines. The banks of these ravines are now held in place by a dense growth of Dogwood, Hazel, Elm, Poplar and Balm.

If, with the settlement and clearing which will soon come, these banks are stripped by escaped fires (no thoughtful person would clear them), land-slides into the streams will be frequent and much earth will be washed into the bay; and thus not only will valuable farming lands be destroyed, but navigation will be obstructed.

The situation can be indicated by the simple statement that many homesteaders have killed their own standing Pine by setting fires they could not control.

Practically we have no law to restrain any person from setting fire as he may choose.

H. B. A.

Duluth, Minn.

Recent Publications.

Die Natürlichen Pflanzenfamilien, conducted by A. Engler and K. Prantel, Leipsic, Verlag von Wilhelm Englemann, 1889. This book is indispensable to the library of every working botanist, who will discover in it vast stores of exact information which, thanks to small but clear typography and a system of abbreviation, is compassed in a wonderfully small space. It is copiously and handsomely illustrated with exceedingly well chosen and well executed figures, which display the structure of the different families and genera discussed, as well as their larger aspects, as the species appear growing in their native haunts. The first volume is devoted to *Cycadaceæ* by Professor Eichler; *Cordaitaceæ* and *Coniferæ* by the same, the last most carefully and elaborately worked up and admirably illustrated; Professor Eichler has also elaborated the *Gnetaceæ*. The *Angiospermæ* are by Engler, the *Potamogetonaceæ* by Ascherson, the *Najadaceæ* by Magnus; the *Juncaginaceæ* by Buchenau and G. Hieronymus, the *Gramineæ* by Heckel, the *Cyperaceæ* by Pax, the *Palmæ* by Drude, the *Araceæ* and *Liliaceæ* by Engler, the *Amaryllidaceæ* by Pax, the *Orchidaceæ* by Pfitzer. This bare enumeration serves to show that several of the largest and certainly some of the

most difficult families of plants have received fresh and careful treatment at the hands of some of the most distinguished specialists of the day. This great work is being continued with regularity, and, considering its character, with wonderful and commendable rapidity.

The Annual Administration Report for the Forest Department of the Madras Presidency, 1887–88, has reached us, and shows that no less than 564 square miles of reserved forest and 1,498 square miles of reserved lands have been added to the areas under the control of the Forest Department during the year. Some remarks upon the Madura district, by Colonel Campbell Walker, Inspector-General of the Forest Presidency, which appear in this report, are as applicable to our western forests as they are to those of the whole of the dry regions of India; and as they are spoken by one of the most capable and experienced forest-officers of the age, they may well be weighed carefully by persons in this country who see no danger in the destruction of the forests on our western mountains. "It takes a long time to reclothe the denuded slopes; but nothing struck me more, after a long and intimate knowledge of the district, than the good results apparent from conservancy and protection, which the villagers themselves admit. It cannot be too clearly borne in mind that we just stepped in in time to prevent utter ruin, for not only had all trees and shrubs been cut, but the very roots rubbed up, and the hilly slopes were fast approaching the last stage, in which remedial measures are all but impracticable, except at very great cost; the soil having been washed away and all seed-bearing trees and shrubs exterminated, nothing being left beyond bare and arid slopes seamed with mountain torrents and ravines, which carried off the rain immediately it fell."

The financial results of protecting the Indian forests are most gratifying. Twenty-five years ago they produced nothing whatever to the government. They began to yield a considerable net income, however, in a few years after forest-conservancy had been established, and it has increased steadily every year since, now amounting to from $5,000,000 to $6,000,000 annually.

Report of the Progress and Condition of the Botanic Garden of Southern Australia during the year 1888. Dr. R. Schomburgk, Director.

The operations of the garden were considerably interfered with by the unprecedented droughts of the year. The amount of rain was only 14.543 inches, or nearly the lowest average ever recorded, and 6.446 inches below the general average of the forty-nine years preceding. Excessive heat, with the thermometer rising to 170 and 177 degrees in the shade, added to the difficulties of conducting horticultural or agricultural operations in the colony; but unfavorable as this condition of things was, it adds to the value of a series of experiments carried on in the garden to determine the value for dry regions of various Grasses and fodder plants. Dr. Schomburgk reports that among these the most successful in withstanding the drought was a newly introduced Grass, a native of South America, *Paspalum dilatatum*. "This valuable Grass has maintained its luxuriant growth without irrigation during the disastrous drought. It grows in tufts, attains considerable size and makes a good leafy growth and roots strongly. Prairie Grass (*Bromus unioloides*) proves one of the best and most nutritious of Grasses, and is little affected by our driest season. The drought did not seem to have the slightest effect upon it. One good characteristic of this Grass is that the self-sown seeds grow freely, and the Grass extends. It is one of the best Grasses for hay." The dry weather made no impression on the California Bunch Grass (*Elymus condensatus*), and *Panicum Crus-galli* stood the severest drought, growing vigorously during December, January and February, supplying nourishing feed for cattle. The Japan Clover, so called (*Lespedeza striata*), does not succeed in the dry climate of South Australia, a fact which confirms the experience of persons who have tried this plant in dry Mediterranean countries. It is evident that moisture is essential for its rapid growth, as is proved by the way this plant has spread in a comparatively short time over a large part of our south Atlantic states.

The value of this report is increased by the addition of a number of colored portraits of specimen trees growing in the garden. Of these, the most interesting to Americans is the so-called Pepper tree, a native of Peru, and of late years largely planted in California for shade and ornament. The specimen in the Adelaide garden was planted in 1863, and has attained the height of sixty-four feet seven inches. The spread of its branches is fifty-four feet, and the girth of the trunk three feet from the ground is nine feet nine inches, a remarkable development for a tree which does not often attain such dimensions. A specimen of *Pinus Sabiniana*, the Digger Pine of California, planted in 1868, has grown to the height of fifty feet, with a spread of branches of thirty-five feet, while the trunk four feet from the ground is seven feet in circumference—certainly a satisfactory growth.

Recent Plant Portraits.

BILLBERGIA VEXILLARIA, *Revue Horticole*, October 16th; a beautiful hybrid obtained by M. André by crossing *B. thyrsoidea* and *B. Morelli*, the latter being the pollen parent. It is a striking plant, with compact habit and showy inflorescence, the scarlet bracts making a strong contrast with the white stem and ovaries and deep dark purple corollas.

Botanical Magazine, November.

CARLUDOVICA ROTUNDIFOLIA, *t.* 7083; a noble species from Costa Rica, nearly related to *C. palmata*, from the leaves of which are manufactured the well known Panama hats, but with larger leaves, borne on petioles sometimes nine feet long.

IRIS BAKERIANA, *t.* 7084; under this name, Professor Foster describes a slender new Iris from Armenia. It is one of the bulbous species, not unlike *I. reticulata* in general appearance, but the cylindrical leaves separate it from that species. It flowers in England in February and March, and some of the flowers are delightfully fragrant with the odor of Violets.

XYLOBIUM LEONTOGLOSSUM, *t.* 7085.

PHAJUS PAUCIFLORUS, *t.* 7086; a native of Java, belonging "to a section of the genus with small flowers which are produced upon the stem, and not amongst the leaves or on tall scapes from the base of the old pseudo-bulbs, as in others of this genus. In this respect, as also in the form of the lip, it approaches those Indian species of Calanthe, in which the lip is at the base of the column, and which render it very difficult to give technical characters for the separation of the two genera."

GERBERA JAMESONI, *t.* 7087; the first representative of this South African genus of *Compositæ* introduced into European gardens; a showy plant, the ray-florets represented as dull yellow on the lower side and bright orange or flame-colored above.

Notes.

Mr. George W. Childs was chosen President of the Pennsylvania Horticultural Society at the annual meeting for electing officers held on Tuesday, the 19th instant.

Five books dealing with the pleasures of contemplative outdoor life and the minor beauties of nature as thereby revealed were recently reviewed in a single issue of the *Atlantic Monthly*.

No plant is prettier in a hanging-basket than the common wild Strawberry. In France one often sees it, used alone, falling in graceful, long tendrils, and equally charming whether in blossom or in fruit.

The hardwood trees of Maine are yearly becoming of more importance in the sum of its lumber exports. As one item we may note that during the past year seven million spool-bars of birch have been shipped to Scotland.

A bibliography of French publications on forests and forest-science, prepared by one of the Professors of the National Forest School, at Nancy, for the exhibit of the Forest Department at the Paris Exposition, contains 8,000 titles, a fact which shows the value placed on forests by the most civilized nations.

Mrs. Mary E. Schenley, a lady of Pennsylvanian origin who has long lived in England, has recently given 300 acres in the city of Pittsburgh for use as a public park, and when it is conveyed to the city there will be granted the privilege of purchasing, at current rates, 100 additional acres which adjoin it.

On Saturday last the *Detroit Journal* gave to each one of 2,000 little girls under twelve years of age a potted Hyacinth bulb, with instructions how to care for it. The flowers are to be exhibited at a charity festival next spring and it is hoped that the children's display will be an attractive feature of the affair.

Among the plants introduced into this country from Japan by Mr. Thomas Hogg is a dwarf, compact, pyramidal variety of the Japanese Hemlock (*Tsuga Sieboldii*), which does not seem to be much known yet beyond the borders of the Flushing Nursery. It is an attractive and interesting plant, nevertheless, well suited to occupy a place in a small garden, and well worth cultivating in any collection of conifers.

The handsome new Brazilian Cucurbitaceous plant recently described by M. Naudin, under the name of *Sicana odorifera*, has this year set fruits for the first time in Europe in the gardens of the Villa Thuret, where it is expected that they will ripen and perfect seed.

Upon a few small plants of *Syringa oblata* which have come under our notice near this city the leaves still remain fresh and green. There is no mildew, nor is there any sign of turning to bright autumn colors, which is said to distinguish this Lilac from others. From other species and varieties near these plants the leaves fell weeks ago.

Among the Chrysanthemums which competed with Ada Spaulding for the cup offered by Mrs. Harrison, Mistletoe, raised by Mr. Frederick Dorner, is said by *The American Florist* to be remarkable for a shade not before seen in Chrysanthemums. This is described as a deep wine color on the upper side of the florets, with a showy mauve reverse. The flower is incurved.

According to the *Pacific Rural Press*, the Sugar Pine-region on the Georgetown divide has been fired in twenty places by the sheep-herders to improve the pasture next year. The mountaineers complain bitterly of the herders, who have destroyed, as is asserted, hundreds of acres of the finest timber. It is claimed that nearly all the destructive forest fires in that vicinity of late have been deliberately kindled by the sheep men.

At the close of the Philadelphia Chrysanthemum Exhibition a committee was appointed for the selection of the finest plant in the hall, to be presented to Mrs. Elizabeth Schaffer, the lady who presented the valuable hall building to the Philadelphia Horticultural Society. The plant selected was one of the two specimens of Mrs. A. Blanc, both prize winners, exhibited by Mr. James Verner, gardener to Mr. A. J. Drexel, who kindly consented to the presentation. This variety was sent out last year by Messrs. Craig & Bro., of Philadelphia.

Professor Bailey, in a recent Bulletin on Tomatoes, from the Cornell Experiment Station, says that out of 200 varieties tested, six could be selected which would combine the desirable market qualities of the entire list. These would be Ignotum, Beauty (or Acme), Mikado, Perfection, Favorite, and Potato Leaf; for very early, perhaps Advance, or Salzer, or Prelude might be added. Of recent varieties especially valuable for amateur cultivation, Dwarf Champion, Lorillard, Peach and Prelude are mentioned. Good varieties seem to run out in about ten years. It is impossible now to get a sample of the Tilden Tomato, once very popular. Trophy is becoming inferior, and Paragon begins to show the same weakness. Frequent transplanting of the young plant and good tillage are essential. Liberal manuring, too, is good practice, although there is a prevailing notion that strong feeding encourages an unprofitable growth of the plant at the expense of the yield of fruit.

The great horticultural exhibition to be held in Berlin next spring will differ from its predecessors in the paramount attention paid to the decorative side of the art—that is, to the employment of plants and flowers in in-door decoration. Only a small part of the exhibits will be shown out-of-doors, the majority of them finding place in a large, permanent exhibition palace, to which green-houses are attached, and in a temporary building to be erected near by. The decoration of ball-rooms, living-rooms, banqueting tables, winter-gardens, etc., will be displayed in appropriate apartments; fountains of various sorts will be shown amid varied groupings of plants; window and balcony gardening will be illustrated, and garden sculpture shown; one immense hall will give room for the erection of arbors and pavilions; decorations for christenings, for weddings and for funerals will be displayed, and all these branches will be open for competitive essays. Of course, with all this, the usual features of a horticultural exhibition will be found, and, moreover, a display of gardening literature and landscape-gardening designs. According to the full descriptions and the numerous plans published in a recent number of *Gartenflora*, this exhibition promises to be of singular interest. It is called a "General Exhibition," but whether it is to be an international one or not we have not seen distinctly stated.

Several large collections of trees and shrubs formed an important and interesting feature in the permanent arrangement of the gardens of the Trocadéro at the Paris Exposition during the past summer. The broad-leaved evergreens and then the conifers were naturally the most conspicuous and satisfactory features in these exhibits, because these plants recover from the effects of transplanting and push out new growths sooner than plants with deciduous leaves, which often do not get hold of the ground fairly for two or three years after they have been transplanted. The number of new plants in these collections, or even of very rare ones, was surprisingly small; and many species of North America, and of eastern Asia, now comparatively well known in American gardens, were entirely unrepresented at the Exposition; although nearly all such plants may be confidently expected to flourish in central Europe. The naming of plants in these collections was not, on the whole, satisfactory; but certainly it was not less so than the nomenclature in commercial establishments everywhere. The largest collections were those of Croux & Fils, of Val d'Aulnay, near Sceaux, and of Honoré Defresne, of Vitry. In both collections there were fine series of specimen plants of our evergreen Magnolia (*M. grandiflora*) —deservedly one of the popular trees in western and southern France, and for many years a specialty in several of the great French nurseries—of Ivies, and of standard, and half specimen of Rhododendrons in many varieties. In the Croux collection were gathered together from the gardens of southern Europe many evergreens, rarely seen at the north. These added interest to the collection, of course, although hardly to be placed among so-called hardy plants. M. Croux showed three conifers which were described as "new." These were a White Pine (*P. Strobus*), with leaves faintly marked with transverse bands of yellow; a dwarf variety of the Norway Spruce (*Picea excelsa*), with a globular head, out of which a few straggling branches grow up irregularly; and a dwarf, compact growing form of the Scotch Pine, called *P. sylvestris columnaris compacta*. This is a feathery and a rather striking looking plant, which, until closely examined, would hardly be taken for any form of Scotch Pine; it was the only one of the three plants of any real value; and perhaps the most interesting novelty in its class shown at the Exposition.

On the 29th of September last the centennial of the birth of Peter Joseph Lenné was celebrated by a gathering of German landscape-gardeners at the village of Bornstedt, near Potsdam, where he lies buried. Holding for many years the position of Director of the Royal Gardens in Prussia, Lenné is considered, by his fellow-countrymen at least, the greatest landscape-gardener of his time. The son of a court-gardener at Bonn, he studied first at home and then in Paris, and later traveled widely in Europe, being greatly influenced, as he confessed, by the example of Kent. Thoroughly versed in horticulture, architecture and engineering, as well as in the principles of landscape-design, he was charged, while still a young man, with numerous tasks in Potsdam and its vicinity, building the so-called "Russian Village" at Potsdam, and restoring the royal gardens, which had suffered from grievous neglect during the long wars with Napoleon. Frederick the Great's gardens at Sans Souci were remodeled, and, we must believe, greatly improved by his hand, and the work was very quickly done, for he had previously established government nurseries, whence he could draw an abundance of material, and preparatory schools, which supplied him with efficient assistants. In 1832, he transformed the Thiergarten, in Berlin, originally a royal hunting-park, into a public garden, which, improved by his successors, is now one of the most beautiful in Europe. It was an idea of Lenné's that it should be ornamented with memorials of national significance. In 1845 he laid out another park, the Friedrichshain, in Berlin, and transformed many squares within the city into blooming gardens. In 1848 he turned a flat kitchen garden at Potsdam into the Marly Park, which has been called "an ideal work in the English style," and later designed the "Sicilian" and "Northern" gardens, with their contrasting forms of vegetation. These are but a few of Lenné's chief undertakings. In speaking of their number and variety a recent writer in *Gartenflora* says: "In all his works, which were conceived on broad, vigorous lines and with a masterly power of in-grouping, he took creative Nature as his guide and developed thereby his own creations in a personal style which found many followers." But any one who remembers the stately terraces and plant-houses at Sans Souci, for example, or the effect of the great central avenue in the Thiergarten, will recognize that his following of Nature did not mean servile imitation, but that he knew what differences of treatment were required in different situations, and could work well in a semi-formal as well as in a thoroughly natural way. He died in 1866, and is commemorated by a bust of Rauch's in the garden of the new palace in Potsdam, by a portrait in the Town Hall of Berlin, and by a street in Berlin and one in Dresden, which have been called by his name. *Magnolia Lenné*, the handsomest of the hybrid Magnolias, recalls his name to all lovers of trees.